REMARKS

The amendments and remarks presented herein are believed to be fully responsive to the Office Action.

Claims 21-24, 30-33 and 35-37 are pending in the present application. Claims 21, 30 and 35 have been amended. All the amendments to the claims are made not to overcome 103 rejections but to overcome 112 rejections. No new matter has been added. The independent claims recited in the present application are claims 21, 30 and 35.

CLAIM REJECTIONS:

A. Claim Rejections under 35 U.S.C. § 112

(1) To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. See, e.g., Moba, B.V. v. Diamond Automation, Inc., 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003).

(2) The Office Action rejects claims 21-24, 30-34 and 35-37 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Particularly, the claimed subject matter of "independent of statistical data of previous searches" was not described in the specification. Applicants respectfully traverse the Examiner's rejection. In accordance with the Examiner's suggestions, however, Applicants respectfully amend claims 21, 30 and 35. Applicants believe the recited limitation "upon receipt of instructions from a manager, associating a representative keyword included in a first keyword group associated with a first representative category, with a second keyword group associated with a second representative category to reflect current societal interest" is clear in light of the specification, even without the limitation of "independent of statistical data of previous searches" as set forth below.

(3) The Office Action further rejects claims 21-24, 30-34 and 35-37 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Particularly, the Examiner refers to the claimed features of "associating a representative keyword included in a first keyword group associated with a first representative category, with a second keyword group associated with a second representative category to reflect current societal interest" are not

clearly understood rendering the claim indefinite. The Examiner further states that "the cited

claimed feature of 'independent of statistical data of previously searches' is conflicting with other

claim cited features, particularly 'means for searching the keyword database for a keyword group

associated with the searched representative category and data indicative of a number of searches

made using one or more representative keywords or other keywords associated with the

respective representative keywords included in the searched keyword group', recited in claim 21,

claim 30 and claim 35, because one ordinary skilled in the art would associate "statistical data of

previous searches" with "data indicative of a number of searches made." The Examiner further

states that "Secondly, since the associated 'second keyword group associated with a second

representative category to reflect current social interest' is not based on historical 'statistical data',

it is unclear what is the association based on to reflect current social interest."

(4) Applicants respectfully traverse the Examiner's rejection. First, the specification supports the

recited features of "associating a representative keyword included in a first keyword group

associated with a first representative category, with a second keyword group associated with a

second representative category to reflect current societal interest." For example, the present

application, para. [0004], [0031] and [0033] recites the following disclosures:

> [0004] However, the service of providing popular search words according to the
> prior art is configured to <u>display several popular search words whose frequency
> ranks high</u>, on a web page or the like, by using the number of keywords input by
> users per certain period. Thus, <u>there is a problem that it is impossible to provide
> users with popular search words **in real time**</u>.
> [0031] According to one embodiment of the present invention, the search service
> system 300 includes the management unit 390 for managing the category
> classification database 310. The management unit 310 receives a selection of a
> representative category related to a predetermined keyword group or a selection
> of a general category related thereto, from a manager; and changes the received
> representative category related to the keyword group or the received general
> category related thereto in the classification record. For example, <u>a representative
> category used to be `movie`, in association with a keyword `seven`. However, in
> case that it is determined that users input the keyword `seven` in order to search
> for a singer `seven`, not a movie titled by `seven`, the manager inputs a selection
> of `singer` for the representative category and a selection of `movie` for the
> general category, in association with the keyword group including the keyword
> `seven`</u>. The management unit 390 enables the classification record 401 as
> illustrated in FIG. 4a to be maintained, based on the selection of the representative
> category and the selection of the general category inputted in association with the

keyword group including the keyword `seven`. Namely, it is possible to change the representative category or general category included in at least one classification record which is maintained in the category classification database 310.

[0033] Therefore, the keyword `seven` intended for the singer `seven` is currently input, however, <u>in case that the social issue changes</u>, for example, into a drama `seven` and user's interests thereon go up, and it is determined that users input the keyword `seven` to search for the drama `seven`, the management unit 390 changes the representative category related to the keyword `seven` into `a drama` and the general category into `a singer`. Thus, an input order of a keyword corresponding to a user's intention can be computed.

The specification clearly supports the recited features of "associating a representative keyword (e.g. "seven") included in a first keyword group associated with a first representative category (e.g. movie), with a second keyword group associated with a second representative category (e.g. singer)" based on the selection of a manager, independent of frequency ranks, to reflect popularity of categorized keywords in real time.

In reference to para. [0035] of the present application, the specification inherently explains that social interest of users could be changed so rapidly that association of a representative keyword with a representative category based on historical search data does not show the correct trend of topical or categorical search keywords.

[0035] The search service system 300 according to the present embodiment is intended to compute an input order of a keyword corresponding to a user's intention by using a concept of a keyword group including at least one keyword. For example, in case that users want to search for the singer `seven`, they often input `seven (in Korean)` or `seven` as a keyword. At this time, the keyword `seven (Korean)` and `seven` are used for the same target. Therefore, in case that an input order is computed based on the number of inputs corresponding to each of keywords `seven (Korean)` and `seven`, unlike users' intention, there may be an event that their interests with respect to the singer `seven` might be depreciated. For example, in case that the input number of keyword `leehyori` is 300, that of keyword `seven (Korean)` is 280 and that of keyword `seven` is 50, the total number of input keywords with respect to the signer `seven` is "280 (seven (Korean))+50 (seven)=330". However, since an input order with respect to the keyword `leehyori` is computed higher, there is a concern that an input order not corresponding to a user's intention, might be computed, such that users might think that people are more interested in the singer `leehyori` rather than the singer `seven`. Therefore, in case that the keyword `seven (Korean)` is input and in case that the keyword `seven` is input, in order to compute the number of inputs by adding up the two cases, the search service system according to the present

invention is configured to comprise a representative keyword (seven (Korean))
and a keyword (seven) having the same/similar meaning thereto, as one keyword
group.

(5) Therefore, the present specification describes the recited features of "upon receipt of instructions from a manager, associating a representative keyword included in a first keyword group associated with a first representative category, with a second keyword group associated with a second representative category to reflect current societal interest" in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.

B. Claim Rejection under 35 U.S.C. § 103
(1) THE RELEVANT LAW

A finding of obviousness must be based on four underlying factual determinations:

  (1) The scope and content of the prior art;
  (2) The differences between the prior art and the claimed invention;
  (3) The level of ordinary skill in the art; and
  (4) Objective considerations of non-obviousness such as commercial success, long felt but unmet need, failure of others to make the invention, and the like. See, *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966). Failure to make these determinations precludes the making of a prima facie case of obviousness.

(1) The Federal Circuit following the Supreme Court's decision in *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727 held that "[An] impermissible "obvious to try" situations occurs where what was 'obvious to try' was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it. ... *KSR* affirmed the logical inverse of this statement by stating that § 103 bars patentability unless "the improvement is more than the predictable use of prior art elements according to their established functions." *In re Kubin*, 2009 WL 877646, 8 (Fed. Cir. 2009). The Federal Circuit also following the Supreme Court's decision in *KSR* held that "the test for obviousness is not whether or not it would have been obvious to try to make the invention, but rather whether or not the inconvenience [sic] would have been obvious to a person of ordinary skill in the inventor's field at the time the invention was made." *Rentrop v. Spectranetics Corp.*, 550 F.3d 1112, 1118 (Fed.

Cir. 2008). In other words, **the test for obviousness is whether a person skilled in the art would have solved a known problem by obvious methods, not whether it would be obvious to try to solve the problem that the invention solves.**

(2) The Office Action states that claims 21-24, 30-33 and 35-37 stand rejected under 35 U.S.C. 103(a), as being unpatentable over Chandrasekar et al. (Pub No. US 2003/0014403) (hereinafter "Chandrasekar") in view of Yoo et al. (Patent No. 7,146,416)(hereinafter "Yoo"), and further in view of Piscitello et al. (Patent No. 7,401,072)(hereinafter "Piscitello"). Applicants respectfully traverse these rejections because as set forth below.

(3) The Present invention

In reference to Fig 5C below, reproduced for the Examiner's convenience with annotation, the present invention is directed to a method of providing a searcher with **popularity information of search keywords including a requested search query and other keywords related to the request search keyword, along with search results, the popularity information reflecting real-time** societal interest.

FIG. 5c
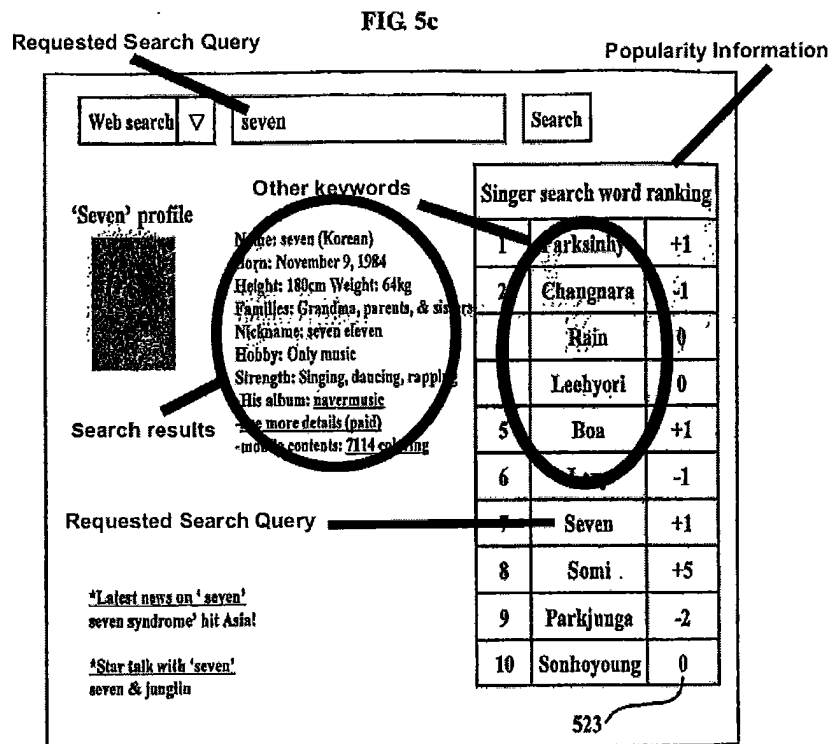
Generally, the preferred embodiment of the present Invention is described in Claim 30. The present invention (1) maintains a representative category associated with one or more

predetermined keyword groups in a category classification database, each of the predetermined keyword groups including one or more representative keywords and other keywords associated with the respective representative keywords; (2) **upon receipt of instructions from a manager,** associates a representative keyword included in a first keyword group associated with a first representative category, with a second keyword group associated with a second representative category to reflect current societal interest; (3) maintains at least one predetermined keyword group and data indicative of a number of searches made using one or more representative keyword or other keywords associated with the respective representative keywords, in a keyword database, each of the representative keywords representing the other keywords associated with the respective representative keyword, which convey a same or similar meaning; (4) receives a search request from a user through a communication network; (5) searches the category classification database for a representative category associated with a keyword group including the search keyword; (6) searches the keyword database for a keyword group associated with the searched representative category and data indicative of a number of searches made using one or more representative keywords or other keywords associated with the respective representative keywords included in the searched keyword group; (7) **provides the user with information showing popularity of keywords related to the search request** based, at least in part, upon the data indicative of the respective number of searches made using the respective representative keywords or other keywords associated with the respective representative keywords included in the searched keyword group; and (8) updates the data indicative of the number of searches made using a representative keyword corresponding to the search keyword or other keywords associated with the representative keyword in response to the search request from the user.

Representative keyword / Representative category

<First keyword group>

<Second keyword group>

Representative keyword

Other keywords associated with the representative keyword
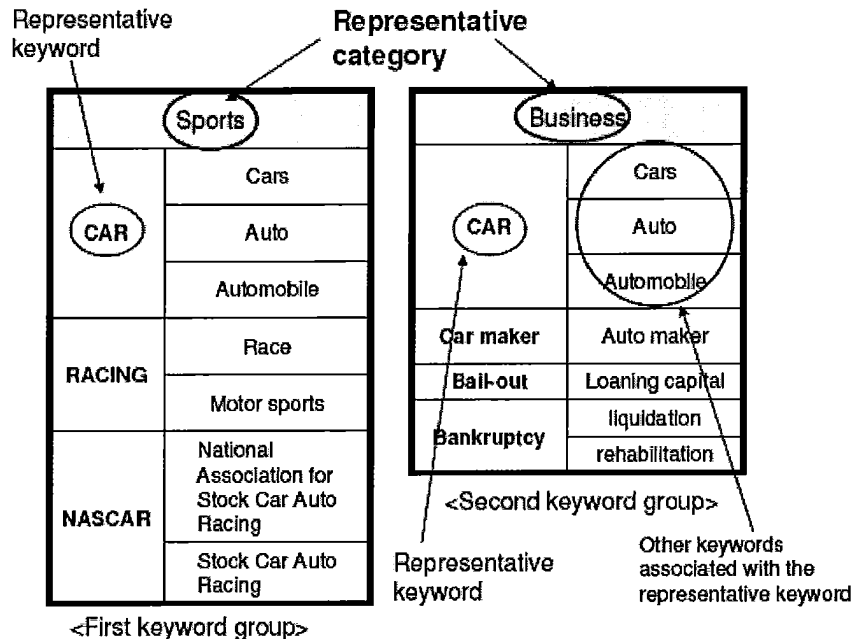
In reference to the above exemplary drawings, produced for the Examiner's convenience with annotation, a term "automobile" has been searched for topics related to recent bail-out program for car manufacturers in Detroit, but the popularity report system could recognize the term "automobile" for topics related to a recent car racing event, NASCAR, held in Florida early this year, instead of the bail-out issues because more searches have been made for the NASCAR event.[1] In this event, the popularity report would show popularity values of various keywords included in the "First keyword group" associated with the category of "Sports", instead of the "Second keyword group" associated with the current hot topic category, "Business." To correct this problem, the claimed invention requires the limitation (b), as proposed herein, of "upon receipt of instructions from a manager, associating a representative keyword included in a first keyword group associated with a first representative category, with a second keyword group associated with a second representative category to reflect current societal interest."[2] The claimed invention, upon receipt of instructions from a manager, associates a representative

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[1] In the above illustrations, the terms "Sports" and "Business" are the representative categories; the term "CAR" is the representative keyword; and the terms "Cars", "Auto" and "Automobile" are keywords associated with the representative keyword, "CAR", recited in Claim 30.

[2] The amended limitation is also supported in the specification, for example, para. [0033], "Therefore, the keyword 'seven' intended for the singer 'seven' is currently input, however, in case that the social issue changes, fore example, into a drama 'seven' and user's interests thereon go up, and…."

keyword (i.e. CAR) included in the first keyword group associated with the first representative category (i.e. Sports), with the second keyword group associated with the second representative category (i.e. Business) to reflect current societal interest.

(4) The Cited Chandrasekar Reference

Chandrasekar discloses a method of refining a user search query based on matching user's queries to key phrases of concepts that have a popularity measured by the appearance of the concept's title and key phrases. Chandrasekar discloses a method of manually associating key phrases with a concept. According to Chandrasekar, the key phrases may be alternative keywords for the concept, misspellings of the concept, shorthand notation for the concept, or other phrases for the concept. (See Chandrasekar, para. [0035]). In reference to para. [0042], Chandrasekar further discloses refinement (modification) of the match. **Upon receipt of a search query from a user, Chandrasekar method maps the user query to one or more search concepts and displays a list of the search concepts associated with the query.**

(5) The Cited Yoo Reference

Yoo is directed to a method of providing buzz (the term "buzz" refers to a measurement of the user activity that relates to a particular topic, term or category) report for a search term, a topic and a category, in order of number of counts, along with an indication of relative change in buzz values. However, Yoo does not teach or suggest manual reassignment of a search keyword to a different category to reflect current hot topics. Further, Yoo does not provide the Buzz report in response to a search request for information in association with a keyword. For example, col. 4, lines 49-54 of Yoo recites:

```
When a user arrives at a particular page after navigating a
subject directory, the page hit might be associated with
the subject of the navigation. By comparing changes or
trends in the traffic associated with a search term or a
category, the "buzz" associated with a topic, term or
category can be assessed.
```

Referring to Figs. 9-13 of Yoo, a user only finds a Buzz report by navigating categories or searching for the Buzz report with a specific term. Yoo does not disclose a method of providing popularity information to a searcher in response to a general search request in a search engine. Whereas, the popularity information of the present invention

is presented to users in association with their usual search task, not a search for popularity information.
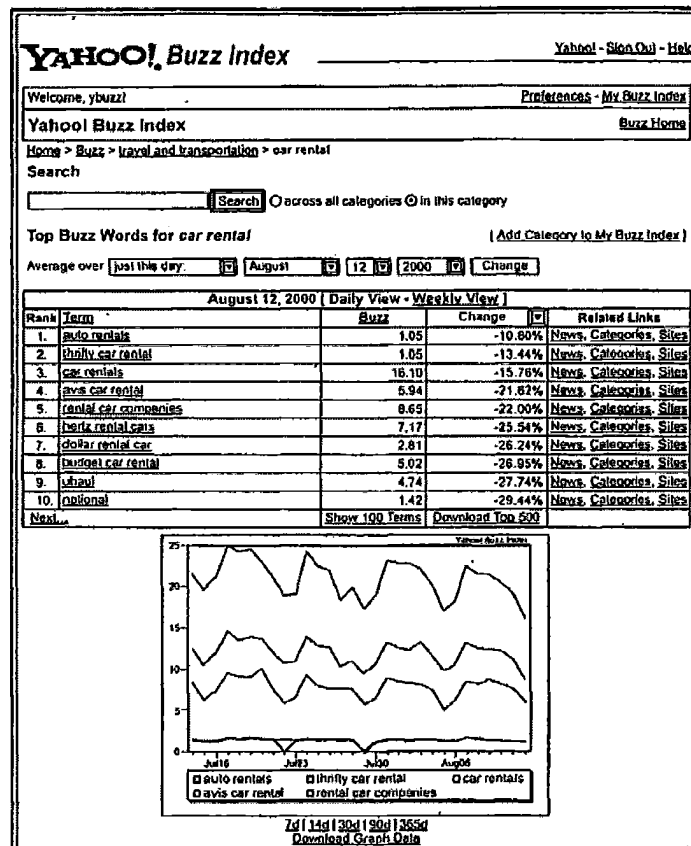

FIG. 11

Claim 21

(1) A prior art reference must be considered in its entirety, i.e., as a whole. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). One cannot take phrases out of context to support its contention. To that extent, Chandrasekar does not teach the claimed system for providing a searcher with popularity information of search keywords of a topic, including a requested search query and other keywords related to the request search keyword, along with search results. The popularity information also provides popularity of other keywords which fall within the same category or topic with the search keyword does.

(2) Examiner attributes this teaching to Chandrasekar. However, Chandrasekar only discloses a method of mapping a user search query to one or more search concepts and displaying a list of the search concepts associated with the search query **to refine the search query**. While Chandrasekar discloses mapping a user search query to multiple search concepts and providing the user with popularity of the concepts to help the user to refine the search query, it does not disclose the claimed method of providing a searcher with **popularity information of** search keywords of a topic, including **a requested search query and other keywords related to the topic**, along with search results. Particularly, Applicants respectfully traverse Examiner's characterization of Chandrasekar as set forth below.

(3) Chandrasekar does not disclose the recited element of a category classification database including a representative category associated with one or more predetermined keyword groups in a category classification database, each of the predetermined keyword groups including one or more representative keywords and other keywords associated with the respective representative keywords. Examiner asserts that key phrases of Chandrasekar correspond to the keyword groups. In reference to para. [0035] of Chandrasekar, the key phrases for the concept are other phrases that a user may enter as a search query to find information regarding the concept (e.g. Tiger Woods), such as alternative key words for the concept (e.g. Woods), misspellings of the concept (e.g. tger), and shorthand notation for the concept (e.g. Tiger). Whereas, taking the above "Car" example, each of the claimed keyword groups associated with a category (e.g. Business) includes one or more representative keywords (e.g. "Car", "Bail-Out", and "Bankruptcy") and other keywords (e.g. "Auto", "Loaning Capital", and "Liquidation") associated with the respective representative keywords.

(4) Chandrasekar does not disclose the recited element of a keyword database including at least one predetermined keyword group and data indicative of a number of searches made using one or more representative keywords or other keywords associated with the respective representative keywords, each of the representative keywords representing the

other keywords associated with the representative keyword, which convey a same or similar meaning. Again, Chandrasekar does not disclose the claimed keyword group and data indicative of a number of searches made using one or more representative keywords or other keywords associated with the respective representative keywords.

(5)   Chandrasekar does not disclose the recited element of means for searching the keyword database for a keyword group associated with the searched representative category and data indicative of a number of searches made using one or more representative keywords or other keywords associated with the respective representative keywords included in the searched keyword group. The key phrases of Chandrasekar may correspond to the recited "other keywords associated with the representative keyword, which convey a same or similar meaning.

(6) Applicants agree with Examiner's characterization that Yoo discloses means for providing the user with information showing popularity of keywords related to the search request based on the statistical measurement of the terms, and statistical measurement corresponds to the data indicative number of searches made. Both the present invention and Yoo provide with popularity information of a representative keyword of a topic or category related to the search request and popularity information of other representative keywords related to the same topic or category, which are not taught or suggested by Chandrasekar. However, Yoo does not teach or suggest reassignment of a search keyword to a different category to reflect current hot topics based on the selection of a manager. Further, Yoo does not provide the Buzz report in response to a search request for information in association with a keyword.

(7) Examiner, referring to col.4 and Fig. 2 of Piscitello, further states that Piscitello discloses a second keyword group associated with a second representative category to reflect current societal interest. Particularly, Examiner asserts that provision of current events/news links corresponding to search query teaches or suggest the claimed features. Again, a prior art reference must be considered as a whole and one cannot take phrases out of context to support its contention. To that extent, Piscitello does not disclose such

claimed features. Piscitello allow users to enter natural language terms that describe a particular web site into an address field of a browser instead of a formal URL.
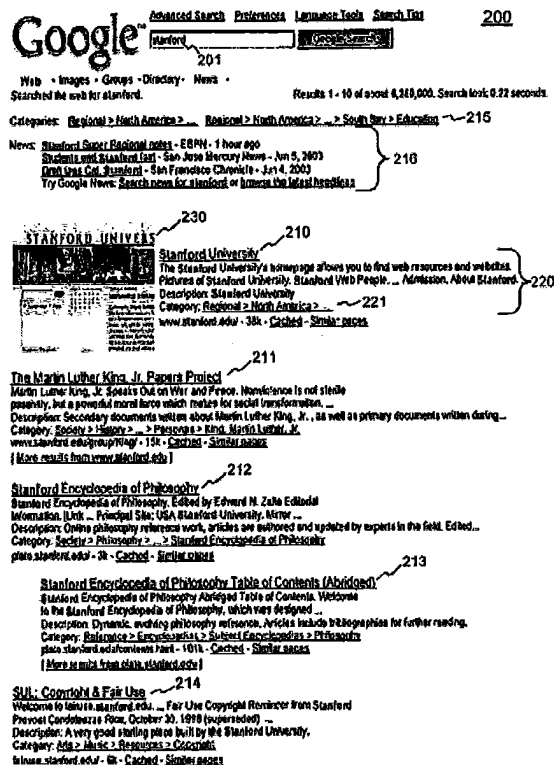
Fig. 2

In reference to the above FIG. 2 of Piscitello, Piscitello discloses a method of providing links 210, 211, 212, 213, and 214 to web pages that search engine determined to be potentially relevant to search query 201 and current events/news links 216 that correspond to search query 201.

Given the foregoing, it is submitted that Chandrasekar fails to disclose limitations recited in claim 21 of the present application and Yoo and Piscitello still fail to remedy the deficiencies of Chandrasekar in teaching all the elements and limitations of claim 21. Neither Chandrasekar nor Yoo nor Piscitello nor their combination disclose or teach all the elements and limitations of claim 21. Therefore, claim 21 is now in condition for allowance.

<u>Claims 30 and 35</u>

Claims 30 and 35 of the present application recite similar limitations with those of claim 21. The patentability of claims 30 and 35 rises or falls on the patentability of claim 21. Therefore, claims 30 and 35 are now in condition for allowance.

<u>Claims 22-24</u>

Claims 22-24 depend from independent claim 21 and, as such, are in allowable condition since claim 21 is clearly allowable over the cited prior art.

<u>Claims 31-33</u>

Claims 31-33 depend from independent claim 30 and, as such, are in allowable condition since claim 30 is clearly allowable over the cited prior art.

<u>Claims 36-37</u>

Claims 36-37 depend from independent claim 35 and, as such, are in allowable condition since claim 35 is clearly allowable over the cited prior art.

In light of the aforementioned amendments and discussion, Applicants respectfully submit that the application is now in condition for allowance.

If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicant's undersigned attorney in this regard.

Respectfully submitted,

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